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PROCEEDINGS
OF THE
SIXTEENTH ANNUAL MEETING
OF
Ohio Institute of Mining Engineers

COLUMBUS, OHIO, JANUARY 20, 21, 22, 1897.

EVENING SESSION — JANUARY 20, 7:00 P. M.

The sixteenth annual meeting of the Ohio Institute of Mining Engineers, convened in the Lecture Room of the Columbus Art School, Y. M. C. A. Building, Prof. F. A. Ray, President, presiding.

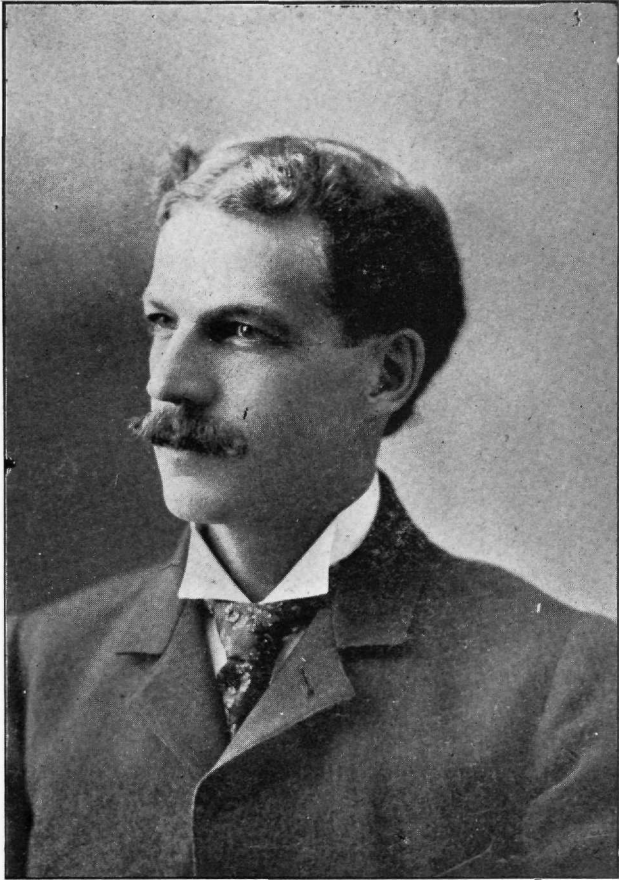
The address by the President:

SIXTEENTH ANNUAL MEETING OHIO INSTITUTE
OF MINING ENGINEERS.

Members of the Institute:

I fully appreciate the honor you have granted me in giving me the opportunity, as President of the Institute, to welcome you to this our sixteenth annual meeting. You will see from the authors and subjects announced by the programme prepared by our untiring and painstaking Secretary, that this promises to be one of the most successful and instructive meetings in the history of the Institute. On behalf of the Institute and myself I wish to thank the members who have come forward so gallantly to contribute to our entertainment and store of information.

Notwithstanding the excitement and turmoil attending a presidential campaign and the general financial depression of the country, the Institute has passed a most successful year. It has added another mile-stone to the many already set in its history as a public benefactor. Namely, its united action to devise ways and means to prevent the avoidable waste of the mineral resources of our State.



FRANK A. RAY, PRESIDENT.

For years the attention of the Institute has been directed to the wasteful mining of coal in Ohio by the reports of the State Geologist, the Mine Inspector and other members who have from time to time read able papers before the Institute on this subject. At our last annual meeting the interest of the Institute in the avoidable wasting of coal in Ohio was quickened into action by the stirring address of President Orton and the great interest taken by the members in the discussion of it, which crystalized into the following resolution:

“Resolved, That a committee be appointed by the President of this Institute from among its members or others representing the different mining interests of the State, which shall appear before the Legislature and request that a committee be appointed by the Legislature to investigate the matter of wasteful mining of coal in this State. Said committee to be named and members of same to be notified of their appointment within thirty days after the adjournment of this meeting.”

In compliance with this your President appointed the following men on the committee:

Wm. H. Jennings, Columbus, Ohio; Wm. Smurthwaite, Steubenville, Ohio; H. D. Marble, Cleveland, Ohio; Wm. H. Turner, Cambridge, Ohio; W. F. Upson, Shawnee, Ohio; Dr. Edward Orton, Columbus, Ohio; H. L. Chapman, Jackson, Ohio; W. B. Hanlon, New Philadelphia, Ohio; Edward Orton, Jr., Columbus, Ohio; Thos. H. Love, Leesville, Ohio.

All of whom cheerfully accepted the labor thrust upon them and at once began earnest work. The results of their labors you will learn from the report of Chairman Jennings and other members of the committee who are duly announced for papers on this subject.

I think you will all agree with me that this is an exceptionally strong committee. It represents all interests connected with the mining of coal in Ohio from the operator to the miner. The members are geographically selected so as to represent all of the coal districts of Ohio.

While your committee failed in securing the passage of the bill empowering the Governor to appoint a committee of three persons to serve without pay to investigate the avoidable waste of coal and the appropriation of \$2,500 for legitimate expenses of the commission, they have at least succeeded in arousing a strong public interest in this just cause. The Western Pennsylvania Central Mining Institute has resolved to undertake the same work for Pennsylvania, owing to the interest aroused by Chairman Jennings' paper read at Pittsburg last June before the joint meeting. I wish to thank the members of the committee one and

all for the unselfish earnestness with which they have done their work. I earnestly advise the Institute to accept their report as a decided step in advance and a mark of great progress, and to continue the same committee for another year.

Reinforced by facts and figures gained by the past year's experience they will be able to go before the next General Assembly with more mature plans and be able to make a clearer presentation of the case and stand a better chance of securing favorable action on its merits. I am not sure but that it would be a good plan for the Institute to instruct the committee to consider the advisability of preparing a bill to meet the requirements of the case rather than try to obtain the commission as the committee now stands instructed.

That there is an unnecessary waste in the mining of coal no one who is at all familiar with the practices of mining in Ohio will attempt to deny. It is a fact that wasteful mining does exist to-day, though not by any means to such an extent as in the past. We cannot deny that we have made rapid progress in the art of mining as in every other line of public and private work. I do not think, as some do, that this wastefulness is willful or is the result of the operators of large companies or foreign syndicates. In my ten years of active experience in mining in five different states I have nearly always found that the large companies were the ones who were taking the initiative in all matters of improvement in systematic mining. No company will deliberately waste marketable coal by poor mining, because by so doing they lose the profit on it. It pays them better to recover it all. If unnecessary waste does exist, it is more apt to be the fault of trusted employes who have charge of the mines.

The unavoidable loss in mining, such as coal lost by faults of all kinds: Barrier protection pillars between mines; dangerous roof; pillars supporting rivers, canals, railroads, etc., and losses attending the drawing of pillars, this class of waste we cannot prevent.

The avoidable losses may occur from the use of a poor system of mining, i. e. the use of pillar and room system when some other system would better meet the physical difficulties of the mine. Losses may occur from the unsystematic working of a good system. Such as turning rooms at full width, allowing rooms to widen to the extent of robbing away the pillar supports between them; no regularity in pillars, rooms or entries rendering the roof supports weak in one part of the mine and unnecessarily strong in another, thus causing squeezes and losses of pillar coal.

Losses may occur from the lack of no system where coal is mined anywhere and everywhere, any way and every way, which in time causes a squeeze or cave in a part or all of the mine, causing a loss of pillar coal and shutting off outlaying small patches of coal or closing the mine forever.

Losses may occur of coal left in the mine intentionally because it is not up to grade in quality or because it is expensive to mine on account of water or hard cutting or some other physical difficulties. How easy it is to cover up such places as these by drawing the pillars around the troublesome place enough to cave in the mine around it and report it as worked out. Of course this is never done in Ohio, but I have known of one or two cases in other states that looked very suspicious.

Losses may occur from squeezes where the mine has been worked systematically and carefully but has been worked with too small pillars between rooms and entries to carry the weight on them and in consequence portions of the mine become closed up and coal lost. Numerous examples of this kind are on record.

Losses may and do occur from poor plans of the mine and from inaccurate surveys or from having no plan or survey at all.

Avoidable losses may and do occur from the half-baked plans of mine bosses who have the opportunity and are ambitious to make a big showing in increased output in a short space of time, and do it invariably at the expense of the welfare of the mine. An example of this kind came to my notice at a mine which I reported on some time ago. Formerly the mine had been carefully operated. The new mine boss was establishing a record for cheap coal and large output, but he was doing it at the expense of the mine. He had widened all entries to room width and had broken all rooms off at full width and had increased them from one-third to one-half the proper width. Is there any wonder that portions of this mine where so butchered were in danger of closing in? And yet when I asked him why he did it, he said that it was his idea of good mining—that the roof held better. "Why, d— it, he says, if a man places his hand on the top of mud flatways it stays up, but if he places his hand edgewise on mud it sinks in, don't it?"

Losses may occur from accidental mine fires which arise from wilful negligence, ignorance or carelessness of some one connected with the operating force of the mine. Can you conceive of a more culpable act than the locating a storage place for oil in a mine and near the main hoisting shaft? Or of permitting men to build a fire inside of a mine to thaw out a frozen water pipe and then to deliberately go off to dinner and leave the mine to the tender mercies of fate? And yet such cases are on record.

The heavy losses attending such accidents, borne alike by the operators and miner, cannot be laid to the door of any heartless company or foreign syndicate, but to some trusted employe where it rightly belongs and to no other.

Losses may occur from inexperienced and incompetent managers. Losses seldom occur from deliberate orders from mine owners to butcher the mine and get cheap coal, because it is not good business and would be a very short-sighted policy. Any company pursuing such a course would certainly sooner or later reap the whirlwind in expensive costs.

It is cheaper to mine systematically than it is to mine un-systematically. It is better for the operator to get all the coal than for him to get only a part. For these reasons, if for no others, you will find that the operators will join us in this effort to devise ways and means to prevent waste of coal and to improve the skill of mining.

There are, however, some losses, such as unmarketable coal, crop coal, and thin seams which are unprofitable to mine. These we cannot hope to better until the controlling conditions of the trade change. It would not be fair to try to force an operator to mine coal which he could not sell. But I do think it would be perfectly fair and that we have a right to demand that all such coal should be left in such shape that it could be mined at some future time when there is a demand for it. There is another source of waste that we are apt to lose sight of, and that is the wasteful practices of consumers of coal owing to poor firing and to improperly designed stoves, furnaces, boilers and engines. A large percentage of coal is thus wasted. Is it a worse sin to be wasteful in the one case than in the other? Is the loss any more reparable in the one than in the other? If we have a moral duty to perform in bettering the practices of mining have not the mechanical engineers the same duty to perform in the use of coal? There again the users of coal will join in his efforts of improvement because of its economy and saving to himself.

The question naturally follows, what should be done to improve the methods of mining? I suppose every one here to-night has his own opinion. I firmly believe that our mining laws could be amended by a wise and just law, unselfish in its motive, fair and equitable to all persons and interests concerned which in effect would control bad and unsystematic practices of mining. I believe the State could wisely enlarge the powers of the Mine Inspector and give him assistants and support enough to carry out the intent and purposes of the law. I would make his office strictly non-partisan and on a civil service basis.

Among some of the things the law should cover would be to require all mines, great or small, to be accurately surveyed and mapped by competent engineers, these maps to be posted to some uniform scale at least once in three months. The manner and system of surveying should be in some general way specified by law to assure accurate and uniform maps for the whole State. Tracings of each should be kept in the Inspector's office and these posted after each survey. The accuracy of said map to be sworn to by the maker.

No one particular system of mining could be laid down by law for any particular mining district, as natural conditions are never alike in any two mines or in any two separate districts of the same vein. Systems must be modified to suit each particular case and in questions of this kind the Inspector should have discretionary powers. I believe also that the greatest good can be done by raising the standard of skill and intelligence of those in charge of mines and mining. Of course we could not do this all at once. The change should be made in such a way as to be gradual and fair in its action to all interests concerned and time enough allowed to let the business adjust itself to the new conditions.

I believe a law requiring certificates of competency for all mine engineers, mine bosses, and fire bosses, hoisting engineers and firemen to be issued by a non-partisan board of examiners, would be a source of great good and a step in the right direction in improving Ohio mining.

A law of this kind should be framed so as to work no hardships to any one now in position or business. For instance—all men of good character who are in position and can show two or more years of continuous service of actual, practical work prior to the enactment of the law, should be given a certificate of competency for his line of work without examination within one year after the passage of the law. All other candidates should be examined and in no case should certificates of competency be granted by the board without proof positive that the candidate has served at least one year as an apprentice in actual practical work along the lines for which he seeks a certificate of competency.

For mining engineers I would be in favor of making the requirements more severe. Two or more years of practical work in mines should be required of every candidate in addition to the mental examination.

However much we may differ as to the details of such a law the principle involved must commend itself to every one who has the welfare of the mining interests at heart.